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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,116	10/27/2003	Shusaku Okamoto	MAT-8478US	2586

23122 7590 10/10/2006

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EXAMINER

MCCLLOUD, RENATA D

ART UNIT PAPER NUMBER

2837

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/694,116	Applicant(s) OKAMOTO ET AL.	
	Examiner Renata McCloud	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-8,10,13-17 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,9,11,12 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/27/03, 7/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1,2,4,9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.
4. Claim 2 recites the limitation "said gripped object external force deducing unit". There is insufficient antecedent basis for this limitation in the claim.
5. Claim 2: lines 1-5 of the claim are indefinite and unclear. Lines 5-9 are also indefinite and unclear.
6. Claim 12: lines 2-4 of the claim are indefinite and unclear. Lines 4-8 are also indefinite and unclear.
7. Claim 4 recites the limitation " the external force detecting section ". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham (US 5200679).

Claim 1,11: an apparatus/method comprising an object grasping unit (11; col. 2:63-3:8) an external force detecting section (col. 2: 63-3:8); a grasped-object external force deducing unit (20 or 80) for determining in a case the external force has a change value equal to or greater than a threshold, a factor of the change values of the external force (col. 3: 24-41,57-60; col. 7:40-57, col. 8:59-64); a grasp-force control section (44) outputting a grasp-force relaxing signal for releasing a grasp force of the object grasping unit or a grasp force strengthening signal for strengthening a grasp force of the object of the object grasping unit according to a deduction result (col. 7:58-8:31).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 4, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Andeen et al (US4637736) or Hill et al (US 3904234).

Claims 2,12: Graham teaches the grasped object external force deducing unit determines when the external force has a change value equal to or greater than the threshold (col.3:24-41). Graham does not teach the determining a non-deliver of the grasped object in a case of detecting frictional force in a gravity direction caused by a fall movement of the object

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after releasing the object from the object grasping unit. Andeen et al teach determining a non-deliver of the grasped object in a case of detecting frictional force in a gravity direction caused by a fall movement of the object after releasing the object from the object grasping unit (col. 5:3-1-23) . Hill et al teach determining a non-deliver of the grasped object in a case of detecting frictional force in a gravity direction caused by a fall movement of the object after releasing the object from the object grasping unit (col. 2:29-45). IT would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Graham to determine a slip taught by Andeen et al or Hill et al, in order to prevent slippage of the grasped object.

Claim 4: Graham teaches the limitations of claim 1. Referring to claim 4, Graham teaches the object grasping unit is an end effector (11), a force sensor (20 or 80) for detecting an external force in a case the external force deducing unit (20,40) determines as a request for releasing the object, the grasp force control section (44) outputs a grasp force releasing signal to the end effector thereby releasing a grasp force of the end effector (col.7:58-8:31). Graham does not teach when a non-delivery of the grasp object is determined, the grasp force control section outputs a grasp force strengthening signal for strengthening the grip force to the end effector. Andeen et al teach the object grasping unit is an end effector (10), and when a non-delivery of the grasp object is determined, a grasp force control section outputs a grasp force strengthening signal for strengthening the grip force to the end effector (col. 5:3-1-23). Hill et al teach the object grasping unit is an end effector (fig. 1) and when a non-delivery of the grasp object is determined, the grasp force control section outputs a grasp force strengthening signal for strengthening the grip force to the end effector (col. 2:29-45). IT would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus

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taught by Graham to strengthen the grip as taught by Andeen et al or Hill et al, in order to prevent slippage of the grasped object.

12. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Chao et al (US 5847529) or Hollbrooks (US 6692049)

Claims 9,18: Graham teaches the limitations of claims 1 and 11. Referring to claims 9 and 18, Graham does not teach in a case of releasing the grasping force, an alarm is issued. Chao et al teach in a case of releasing the grasping force, an alarm is issued (col. 1:20-28). Hollbrooks teaches a case of releasing the grasping force, an alarm is issued (col.11:37-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Graham to strengthen the grip as taught by Chao et al or Hollbrooks, in order to indicate that the manipulator is in need of repair.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

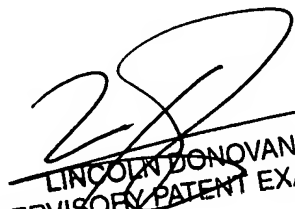
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud
Examiner
Art Unit 2837

RDM



LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER